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# sixty-ninth report of the state geologist (1975 - 1976)

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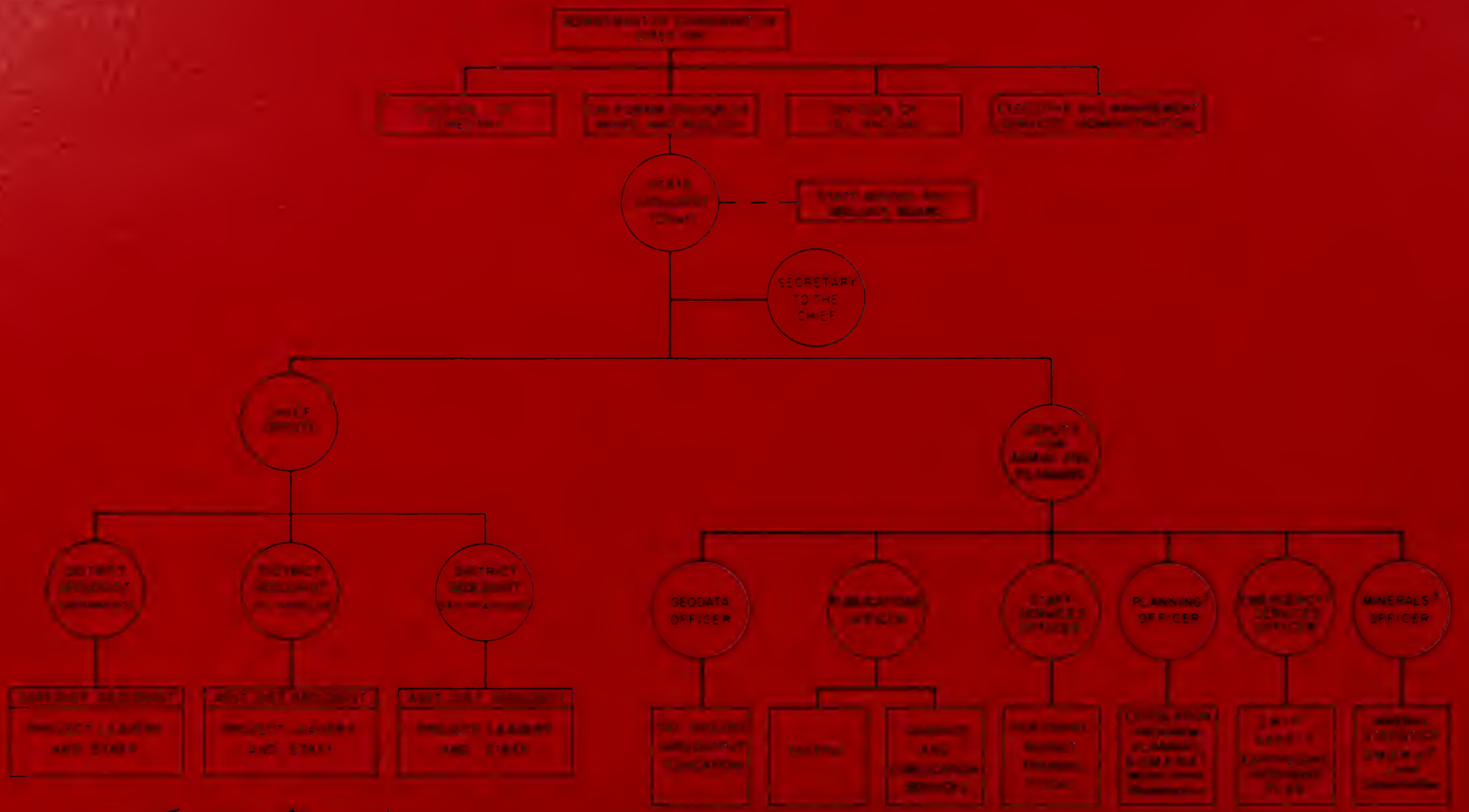
# ORGANIZATION
# CALIFORNIA DIVISION OF MINES AND GEOLOGY

MARCH 1, 1976

GOVERNOR OF CALIFORNIA

SECRETARY FOR RESOURCES AGENCY




APPROVED: J. E. Gaylord

SIXTY–NINTH REPORT OF THE STATE GEOLOGIST

# ACTIVITIES OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY JULY 1, 1975, THROUGH JUNE 30, 1976

Thomas E. Gay, Jr., Acting State Geologist
California Division of Mines and Geology
1416 9th Street, Room 1341
Sacramento, CA 95814

**STATE OF CALIFORNIA**
EDMUND G. BROWN JR.
*GOVERNOR*

**THE RESOURCES AGENCY**
CLAIRE T. DEDRICK
*SECRETARY FOR RESOURCES*

**DEPARTMENT OF CONSERVATION**
LEWIS A. MORAN
*DIRECTOR*

**DIVISION OF MINES AND GEOLOGY**
THOMAS E. GAY JR.
*ACTING STATE GEOLOGIST*

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# PREFACE

The programs of the Division of Mines and Geology are designed to respond to the increasingly complex demands for geologic information of a state faced with current and potential shortages of energy and minerals, conflicts between competing users of land and mineral resources, a well–founded public concern about the environmental consequences of mineral resource development, and the needs of a population growing both in numbers and in expectations for an improved standard of living and a better quality of life.

Mineral resources and geologic hazards, especially earthquakes, have received a great deal of public attention because of increased coverage by the press. This public attention has affected virtually every activity and program of the Division of Mines and Geology. During fiscal year 1975–76, for example, the Division answered about 192,000 public inquiries dealing with its programs. In addition, inquiries have become more complex and require more intricate responses.

An historic mission of the Division has been to provide information useful to the mineral industry, although programs concerning geologic hazards have received primary attention in recent years. The passage of the Surface Mining and Reclamation Act of 1975 has reaffirmed the Legislature's concern about mineral resources. The Act requires local government to consider mineral resource deposits before acting on land–use proposals which may exclude the future use of the mineral resource. The Division is charged with classifying the lands as to their mineral content.

As California's population continues to expand and people continue to concentrate in cities, earth science becomes increasingly important in maintaining an acceptable environment. In many urban areas in California, all flat ground with good foundation conditions is already developed and only unstable hillslopes and other hazardous areas are available for future development. With the scarcity of suitable land, increasing development costs, and major potential hazards, earth science becomes critical in guiding urban development. The total dependency of urbanization and technology on natural resources and on a stable urban environment was no problem when resources were plentiful, population growth did not exceed the capability of the land and water to absorb resultant wastes, and complex economic and industrial centers did not concentrate in hazard areas. Recognition of the natural limitations on exploitation of the earth is a first step in developing opportunities for continued growth through effective land–use management.

## HIGHLIGHTS OF FISCAL YEAR 1975–1976

The 1975–76 fiscal year was a year of trial for the Division. In July 1975 the Division began work on reports due to the Legislature by December 1, 1975, on its plans for implementation of the Alquist–Priolo Special Studies Zones Act and the Strong Motion Instrumentation Program as recommended by the Legislative Analyst and adopted by the Committee on Conference of the Legislature. On August 1, 1975, the 5.7 magnitude Oroville earthquake struck and the Division immediately responded with field investigations by geologists, seismologists, and geophysicists and shortly thereafter preparation of the Oroville earthquake report began. The Oroville earthquake report was published January 13, 1976. In September James E. Slosson resigned as State Geologist and Thomas E. Gay, Jr., was named acting State Geologist. On September 28, 1975, the Governor approved Senate Bill 756, the Surface Mining and Reclamation Act of 1975, which was to take effect January 1, 1976. This Act abolished the existing Mining and Geology Board and created a new board with expanded duties. Eight new board members were appointed May 25, 1976, and their first meeting was held on June 16, 1976.

The 1975–76 fiscal year was also a year of accomplishment for the Division. The Division published the 1:750,000–scale Fault Map of California on April 1, 1976. This comprehensive map shows the current data on recency of surface faulting in California and is a basic document for land–use planning. The Division continued its cooperative program of geologic hazards mapping with county governments and the U.S. Geological Survey, and accelerated its studies of mineral resources availabilities with grants from the U.S. Bureau of Mines totaling $174,000.

## STATE MINING AND GEOLOGY BOARD

A State Mining and Geology Board exists as part of the Department of Conservation. Prior to January 1, 1976, the board consisted of 11 members. On January 1, 1976, Senate Bill 756, authored by Senator John A. Nejedly, became effective (Chapter 1131, Statutes of 1975) and the 11–member board was abolished. In its place a 9–member board was established. Eight members of the new board were appointed by the Governor on May 27, 1976. The ninth position was vacant on June 30, 1976, the end of the fiscal year.

The board's responsibilities are stated in the Public Resources Code as follows:

> "The board shall represent the state's interest in the development, utilization, and conservation of the mineral resources of the state and the reclamation of mined lands, as provided by law, and federal matters pertaining to mining, and shall determine, establish, and maintain an adequate surface mining and reclamation policy. The board shall also represent the state's interest in the development of geological information necessary to the understanding and utilization of the state's terrain, and information pertaining to earthquake and other geologic hazards. General policies for the division shall be determined by the board.
>
> "The board shall also serve as a policy and appeals board for the purposes of the Alquist–Priolo Special Studies Zones Act (Chapter 7.5, Division 2, Public Resources Code).
>
> "On or before December 31 of each year, the board shall submit to the Governor and the Legislature recommendations regarding needed research projects relating to the state's terrain, mineral resources, mining, the reclamation of mined lands, and earthquakes and other geologic hazards.
>
> "The board may provide for a statewide program of research regarding the technical phases of reclaiming mined lands which may be delegated to it by law and may accept funds from the United States or from any person to aid in carrying out the provisions of this section. The board may conduct such a program independently or by contract or in cooperation with any person, public or private organization, federal agency, or state agency, including any political subdivision of the state.
>
> "The board shall provide for a public information program on matters involving the state's terrain, mineral resources, mining, the reclamation of mined lands, and earthquakes and other geologic hazards."

The State Geologist, who serves as Chief of the Division, is "appointed under provisions of the State Civil Service Act by the Director (of the Department of Conservation) upon nomination by the Board".

During fiscal year 1975–76, the "old" Board met July 24 in San Francisco, September 25 in Sacramento, October 23 in Los Angeles, and December 4 in Sacramento; the "new" Board met June 16 and June 29 in Sacramento.

### Board Actions, Fiscal Year 1975–76

–Asked Division to prepare guidelines for preparation of reports on property within Alquist–Priolo Special Studies Zones.

–Adopted a statement regarding the Death Valley mining controversy.

–Adopted Rules of Order (new board).

–Appointed a subcommittee for nomination of State Geologist.

–Asked the Acting State Geologist to provide information regarding the Division's budget.

–Asked the Acting State Geologist for a presentation of examples of the Office of Planning and Research's proposed urban area maps.

–Appointed a board member to serve as liaison with the Attorney General's office.

–Appointed a subcommittee to deal with the technical problems of reclamation procedures for mining operations.

–Appointed a subcommittee to deal with the implementation of reclamation procedures for mining operations.

–Appointed a subcommittee to deal with the technical criteria for designating areas of significant mineralization.

–Appointed a subcommittee to deal with the implementation of guidelines for designating areas of significant mineralization.

## STATE MINING AND GEOLOGY BOARD EFFECTIVE TO DECEMBER 31, 1975

| *BOARD MEMBERS* | *TERM* | *FIRST APPOINTED* | *SPECIALTY (per Sec. 661, PRC, in effect to December 31, 1975)* |
|---|---|---|---|
| CLARENCE R. ALLEN (CHAIRMAN)<br>Seismological Labarotary<br>Califarnio Institute of Technalagy<br>Pasadena, CA 91125 | 1973 – 1977 | 1969 | Geophysicist<br>Seismalogist |
| PHILIP R. BRADLEY<br>2801 Oak Knall Terrace<br>Berkeley, CA 94705 | 1972 – 1976 | 1944 | Mining Engineer |
| EDMOND F. BROVELLI<br>President, Basalt Rack Compony<br>P.O. Box 2540<br>Nopo, CA 94558 | 1971 – 1975 | 1962 | Public member<br>Mining interests |
| L. LeROY CRANDALL<br>LeRoy Crandall & Associates<br>711 North Alvorodo Street<br>Los Angeles, CA 90026 | 1973 – 1976 | 1973 | Soils engineer |
| JOSEPH E. HARING<br>Economics Deportment<br>Occidentol College<br>Los Angeles, CA 90041 | 1971 – 1975 | 1971 | Public member |
| PAUL C. HENSHAW<br>Hamestake Mining Compony<br>650 Californio Street<br>San Francisco, CA 94108 | 1972 – 1976 | 1968 | Mining gealagist |
| RICHARD H. JAHNS<br>Schaal af Eorth Sciences<br>Stanford University<br>Stonford, CA 94305 | 1974 – 1978 | 1966 | Geolagist |
| J. WILMAR JENSEN<br>Jensen and Gaarde<br>1514 H Street (P.O. Bax 1726)<br>Modesta, CA 95354 | 1974 – 1978 | 1971 | Public member |
| EUGENE F. REID (VICE CHAIRMAN)<br>P.O. Bax 2471<br>Bokersfield, CA 93303 | 1971 – 1975 | 1971 | Gealogist |
| KARL V. STEINBRUGGE<br>Manager, Eorthquake Department<br>Insuronce Service Office<br>550 Califarnia Street<br>San Froncisca, CA 94104 | 1973 – 1977 | 1969 | Structurol engineer |
| DONALD A. WOOLFE (SECRETARY)<br>Planning Director<br>San Mateo Caunty Planning Department<br>Caunty Government Center<br>Redwaad City, CA 94063 | 1973 – 1977 | 1973 | County government<br>Urban plonner |

## STATE MINING AND GEOLOGY BOARD EFFECTIVE FROM JANUARY 1, 1976

| *BOARD MEMBER* | *CURRENT TERM (exp. Jan. 15)* | *FIRST APPOINTED* | *SPECIALTY (per Sec. 662, PRC)* |
|---|---|---|---|
| PRISCILLA C. GREW (CHAIRPERSON)<br>Assistont Research Geologist<br>Institute of Geaphysics and Planetary Physics<br>University af Califarnia<br>Los Angeles, CA 90024 | 1976 – 1978 | 1976 | Nonspecialized experience (UCLA) |
| ALCIDES S. FREITAS<br>8409 Purdue Court<br>Socromento, CA 95826 | 1976 – 1977 | 1976 | Environmentol protection (Socromento County Office of Environmentol Monogement) |
| WILLARD P. FULLER, JR.<br>P.O. Bax 694<br>Son Andreas, CA 95249 | 1976 – 1977 | 1976 | Mining engineer: mining minerals in Colifarnio (Colaveros Cement Co.) |
| ARTHUR GRANTZ (VICE CHAIRPERSON)<br>380 Olive Street<br>Menla Pork, Colifarnio 94025 | 1976 – 1979 | 1976 | Minerol resources (U.S. Geologicol Survey) |
| RETURN F. MOORE<br>President, Maore & Taber<br>4530 East La Polmo Avenue<br>Anoheim, CA 92807 | 1976 – 1980 | 1976 | Registered civil engineer: soil engineering (Moore & Tober) |
| DOUGLAS W. SPRAGUE<br>6738 Vanport Avenue<br>Whittier, CA 90606 | 1976 – 1977 | 1976 | Registered geologist: mining geology (Pryor–Giggey Co., Santa Fe Springs) |
| ROBERT H. TWISS<br>1200 Masonic Street<br>Berkeley, CA 94706 | 1976 – 1978 | 1976 | Londscope orchitect: soil conservotion or revegetation (Univ. of Colif. College af Environmentol Design Dept. af Londscope Architecture) |
| ELEANOR J. YOUNG<br>123 Hoaver Raad<br>Santa Cruz, CA 95065 | 1976 – 1979 | 1976 | Local government representative: urban planning (Sonta Cloro Transpartotian Section) |

Vacant Pasitian as of June 30, 1976

## ADMINISTRATION AND ORGANIZATION

Thomas E. Gay, Jr., Chief Deputy, was named Acting State Geologist in October 1975 following the resignation of James E. Slosson. Rudolph G. Strand, Deputy for Administration and Planning, was appointed Acting Chief Deputy; John T. Alfors, Sacramento District Geologist, was appointed Acting Deputy for Administration and Planning; and C. Forrest Bacon, Assistant District Geologist, was appointed Acting District Geologist for the Sacramento District.

The organization of the Division was modified slightly (see the Division organization chart, inside front cover). The Alquist–Priolo fault hazards zoning project was placed under the administrative direction of the District Geologist in San Francisco. The geologists working under the direction of the Minerals Officer were placed under the administrative direction of the District Geologists. The geologic review activities conducted by a special assistant to the State Geologist were placed under the direction of the District Geologist in Sacramento.

The Chief Deputy State Geologist serves as the chief of district operations and provides work direction to the District Geologists. The District Geologists are responsible for the initiation of projects, the timely completion of project work, negotiation of cooperative contracts, and the technical review of all manuscripts originating in their districts.

The Deputy for Administration and Planning serves as the chief of headquarters staff and directs the work of the Geodata Officer, Publications Officer, Staff Services Officer, Planning Officer, Emergency Services Officer, and the Minerals Officer. The Geodata Officer directs the distribution of information to the public and governmental agencies, and the publishing of the monthly magazine, *California Geology*. The Publications Officer directs the editing and processing of manuscripts for publication. The Publications Officer position was created early in the fiscal year to facilitate the processing of publications. The Staff Services Officer provides administrative services to the Division. The Planning Officer analyzed the Surface Mining and Reclamation Act of 1975 and outlined the tasks to be carried out by the Division and the newly appointed State Mining and Geology Board, in addition to analyzing bills being considered by the Legislature. The Emergency Services Officer is in charge of the Strong Motion Instrumentation Program, serves as the Division safety officer, and is responsible for maintaining an operational earthquake response plan for the Division. The Emergency Services Officer position was created this fiscal year because of the growing importance of this area of Division responsibility. The Minerals Officer plans and coordinates the minerals program of the Division. The Minerals Officer position, formerly a Special Assistant to the Chief, was placed under the supervision of the Deputy for Administration and Planning.

## PERSONNEL

Permanent Division staff comprises 52 geologists, 2 geochemists, 3 geophysicists, 2 seismologists and 49 supporting technical, editorial, and clerical personnel.

### Hired

| | |
|---|---|
| Senior Geologist | Bennie W. Troxel (reinstotement) |
| Assistont Gealogist | Thamos P. Anderson |
| Electricion I | Miltan J. Seoton |
| Electronics Technician | Albert G. Guyer |
| Electronics Technicion | Charles E. Luzier |
| Loborotary Technician | Ricarda de Rama |
| Geologic Aid | William Lo |
| Seniar Clerk–Typist | Beverly M. Rhades |
| Clerk–Typist II | Morcy L. Odermatt |

### Promoted

| | |
|---|---|
| Associote Gealagist | Edmund W. Kiessling |
| Stoff Services Anolyst | Jaanne M. Troer |
| Editoriol Aid | Marilyn F. Doyton |
| Editariol Aid | Morgoret W. Turner |
| Senior Account Clerk | Venice Huffmon |
| Stenogropher | Betty E. Van Den Berg |
| Clerk-Typist I | Leslie H. Pallack |

### Transferred

| | |
|---|---|
| Department of Canservation Headquorters | Judith E. Salmen, Clerk–Typist II |
| | Williom B. Clark, Assaciote Geologist |
| Sacramenta District | Perry Y. Amimata, Seniar Engineering Geolagist |
| | Chorles R. Real, Assistant Gealagist |
| | Yvar H. Smitter, Assistont Geologist |
| San Bernordino Office | Harry P. LaGesse, Electranics Technicion |
| San Francisco District | Trindo B. Ristau |

### Separated

| | |
|---|---|
| State Gealogist | James E. Slossan |
| Seniar Geolagist | Mary R. Hill (Leove of absence) |
| | Bennie W. Troxel (Retired) |
| Associate Seismalagist | Donold A. Radgers |
| Geologic Aid | Williom Genthe |
| Loborotory Technicion | Lydio Lofgren (Retired) |
| Stenogropher | Laura L. Carter (Leave af absence) |

### Temporary Employees

The Division has participated in various Federal, State, and locally funded student aid programs throughout the year.

Student Assistants and non–paid Volunteer Government Interns are employed in full– or part–time positions during the year.

This program of hiring part–time and seasonal help is an integral part of the Division's affirmative action and recruitment program. Fifty percent of the Division's part–time help are from minority groups.

## PERMANENT DIVISION STAFF MEMBERS ON JUNE 30, 1976

| CLASSIFICATION | EMPLOYEE | LOCATION |
|---|---|---|
| Acting State Geologist | Thomas E. Goy, Jr. | Headquarters |
| Acting Chief Deputy State Geologist | Rudolph G. Strand | Headquarters |
| Acting Deputy for Administration and Planning, Supervising Geologist | John T. Alfors | Headquarters |
| Emergency Services Officer, Senior Geologist | Tom M. Wootton | Headquarters |
| Minerals Officer, Senior Geologist | James R. Evans | Headquarters |
| Planning Officer, Senior Geologist | Robert Streitz | Headquarters |
| Geologic Data Officer, Associate Geologist | Carl J. Hauge | Headquarters |
| Staff Services Officer, Staff Services Analyst | David A. Gilb | Headquarters |
| District Geologist, Supervising Geologist | Clifton H. Gray, Jr. | Los Angeles |
| Assistant District Geologist, Senior Geologist | Paul K. Morton | Los Angeles |
| Acting District Geologist, Senior Geologist | C. Forrest Bacon | Sacramento |
| Acting Assistant District Geologist, Senior Engineering Geologist | Perry Y. Amimoto | Sacramento |
| District Geologist, Supervising Geologist | Richard M. Stewart | San Francisco |
| Assistant District Geologist, Senior Geologist | Charles C. Bishop | San Francisco |
| Senior Geologist | Mary R. Hill | Headquarters |
| Senior Geologist (Geophysics) | Rodger H. Chapman | Sacramento |
| Senior Geologist | Charles W. Chesterman | San Francisco |
| Senior Geologist | Earl W. Hart | San Francisco |
| Senior Geologist | Charles W. Jennings | San Francisco |
| Senior Geologist | George B. Cleveland | San Luis Obispo |
| Petroleum Geologist | Edward C. Sprotte | Los Angeles |
| Associate Geologist | William B. Clark | Headquarters |
| Associate Geologist | Allan G. Barrows | Los Angeles |
| Associate Geologist | James E. Kahle | Los Angeles |
| Associate Geologist | Edmund W. Kiessling | Los Angeles |
| Associate Geologist | Richard B. Saul | Los Angeles |
| Associate Geologist | F. Harold Weber, Jr. | Los Angeles |
| Associate Geologist | John L. Burnett | Sacramento |
| Associate Geologist | Michael P. Kennedy | San Diego |
| Associate Geologist | Michael E. Huffman | San Francisco |
| Associate Geologist | Frederic R. Kelley | San Francisco |
| Associate Geologist | Salem J. Rice | San Francisco |
| Associate Geologist | Melvin C. Stinson | San Francisco |
| Associate Geologist | John W. Williams | San Francisco |
| Associate Geochemist, Geochemical Manager | Hasmukhrai H. Majmundar | San Francisco |
| Associate Geochemist | Glenn A. Borchardt | San Francisco |
| Associate Geophysicist | John H. Bennett | Sacramento |
| Associate Geophysicist | Gordon W. Chase | Sacramento |
| Associate Geophysicist | William M. Wells | Sacramento |
| Associate Seismologist | Roger W. Sherburne | Sacramento |
| Associate Seismologist | Tousson R. Toppozada | Sacramento |
| Assistant Geologist | Mary C. Woods | Headquarters |
| Assistant Geologist | Thomas P. Anderson | Los Angeles |
| Assistant Geologist | David J. Beeby | Los Angeles |
| Assistant Geologist | Donald L. Fife | Los Angeles |
| Assistant Geologist | Robert L. Hill | Los Angeles |
| Assistant Geologist | Drew P. Smith | Los Angeles |
| Assistant Geologist | Theodore C. Smith | Los Angeles |
| Assistant Geologist | Quintin A. Aune | Sacramento |

| CLASSIFICATION | EMPLOYEE | LOCATION |
|---|---|---|
| Assistont Geolagist | Joy H. Pawer | Socramenta |
| Assistont Gealogist | John S. Ropp | Sacramento |
| Assistont Geologist | Chorles R. Reol | Sacromenta |
| Assistont Gealagist | Yvor H. Smitter | Socromento |
| Assistont Geologist | Gory C. Toylor | Socramento |
| Assistont Gealogist | Charles F. Armstrong | San Froncisca |
| Assistont Geologist | Edword J. Bortugno | Son Froncisco |
| Assistont Geologist | Trindo B. Ristou | Son Froncisco |
| Assistont Geologist | Dovid L. Wogner | Son Froncisco |
| Assistont Geologist | Russell V. Miller | Santo Ano |
| Assistont Gealagist | Siang S. Tan | Sonto Ano |
| Stoff Services Anolyst | Joonne M. Troer | Heodquorters |
| Civil Engineering Technicion | Leslie Morraw | Socromento |
| Electronics Technician | Albert G. Guyer | Sacramenta |
| Electronics Technicion | Horry P. LoGesse | Son Bernordino |
| Electricion I | Chorles E. Luzier | Socromento |
| Electrician I | Milton J. Seaton | Socromento |
| Labaratary Technicion | Ricordo de Romo | Son Froncisca |
| Loborotory Technicion | Marcas R. Lazo | San Francisca |
| Loboratory Technician | Chorles B. Smith | Son Froncisco |
| Gealogic Aid | Michael A. Manson | Los Angeles |
| Gealogic Aid | Gordan L. Compbeli | Socromenta |
| Geolagic Aid | Ernest C. Durrwochter | Socromenta |
| Geologic Aid | Duone A. McClure | Son Froncisca |
| Gealagic Aid | Williom La | Son Francisca |
| Publicotians Supervisor | R. Merl Smith | Heodquorters |
| Senior Geologicol Drofting Technician | Richord R. Moor | San Froncisco |
| Geologicol Drofting Technicion | Richord T. Boylon | Heodquorters |
| Geolagicol Drofting Technicion | Dorothy Y. Fang | Headquorters |
| Geologicol Drofting Technicion | Edward L. Foster | Heodquorters |
| Gealagicol Drafting Technician | Vivian W. Muston | Headquorters |
| Geologicol Drofting Technicion | Jeffrey O. Tombert | Heodquorters |
| Geologicol Drofting Technicion | Elizobeth M. Lindgren | Las Angeles |
| Geologicol Drofting Technicion | Danold R. Anderson | San Froncisca |
| Geologicol Drofting Technicion | Robert R. Switzer | Son Francisco |
| Grophic Artist | Ronald L. Morgon | Headquorters |
| Librorion | Angela Brunton | Son Froncisca |
| Librory Technicol Assistant | Judith A. Taale | Son Froncisca |
| Secretory I | Mory L. Burgess | Heodquorters |
| Senior Stenogropher | Darris P. Compbell | Socramento |
| Senior Stenogropher | Jasephine M. Territo | Son Francisca |
| Editoriol Aid | Marilyn Doyton | Heodquorters |
| Editoriol Aid | Morgoret W. Turner | Heodquorters |
| Senior Informotian Clerk | Eleanar M. Leorned | San Froncisca |
| Senior Clerk–Typist | Beverly M. Rhodes | Heodquorters |
| Senior Clerk–Typist | Wilmo B. Ashby | Los Angeles |
| Seniar Clerk–Typist | Glorio Tomei | Socromenta |
| Stenogropher | Suzonne L. Cross | Headquorters |
| Stenogropher | Beryl Adrion | Socromento |
| Stenogropher | Betty E. Van Den Berg | Son Froncisca |
| Stenogropher | Loura B. Corter | Son Froncisca |
| Senior Account Clerk | Venice Huffmon | Los Angeles |
| Clerk–Typist II | Vicki L. Forrester | Heodquorters |
| Clerk–Typist II | Sue Torres | Los Angeles |
| Clerk–Typist II | Marcy L. Odermott | Socramenta |
| Clerk–Typist II | Dorothy L. Homilton | Son Froncisco |
| Clerk–Typist II | Morionne K. Rojo | Son Froncisca |
| Clerk–Typist I | Leslie H. Pollock | Heodquorters |
| Jonitor | Andrew C. Love | Son Froncisco |

## DISTRICTS

### Los Angeles

The Los Angeles District serves all of southern California. It comprises eleven counties bounded on the north by, and including, the counties of San Luis Obispo, Kern, and Inyo. District headquarters is located in the Junipero Serra State Building at 107 South Broadway in the Los Angeles Civic Center.

The District staff includes 17 geologists, 1 geologic aid, 1 drafting technician, and 3 secretaries. Some geologists work from small field offices near their projects. Currently these are at San Diego, San Luis Obispo, Santa Ana, and UCLA. District headquarters maintains a public information center as well as a small technical library.

The bulk of the project work of the district involves cooperative investigations with local counties and the U.S. Geological Survey, and is concerned primarily with geologic hazards and environmental geology as it relates to proper land use. During the current year these investigations have concentrated heavily on active and potentially active faults. Comparatively less effort was devoted to mineral resources studies.

### Sacramento

The Sacramento District Office, located at 1416 Ninth Street, Room 118, in Sacramento , provides geologic services to 30 counties in central inland and northeastern California. In addition, this District office provides geophysical and seismological services to the entire State.

District efforts have focused on crustal deformation and seismicity with a view toward developing an earthquake–warning system by identifying precursors to damaging earthquakes. Geological work has emphasized mineral resources and the evaluation of environmental considerations in land development.

The District staff consists of 7 geologists, 3 geophysicists, 3 seismologists, 2 geologic aids, 2 secretaries, and 1 information clerk.

### San Francisco

The San Francisco District office, which has been housed since 1896 in the historical landmark, the Ferry Building, covers a working territory of 17 counties in northern and central coastal California. This includes approximately two–thirds of the California seacoast, most of the central and northern Coast Ranges, and much of the very active San Andreas and related faults.

Several Division–wide facilities exist in this District office: the geochemical laboratory, which provides analytical and testing support to Division staff; the map room, in which various maps such as the Geologic Map of California series are compiled and prepared; the Division's large and complete technical reference library; and one of the largest mineral museums on the west coast.

Many cooperative projects with various San Francisco Bay area counties and the U.S. Bureau of Mines have been undertaken by this office. The main emphasis is on geologic hazards and seismic safety, with a lesser effort in mineral resources activities. The Alquist–Priolo Special Studies Zones program also is conducted in this office.

The District staff comprises 14 geologists, 2 geochemists, 3 laboratory technicians, 2 geologic aids, 3 draftsmen, 2 librarians, 4 secretaries and clerks, 2 information clerks, and 1 janitor.

## PROGRAMS OF THE DIVISION

### ENVIRONMENTAL AND ECONOMIC GEOLOGY ELEMENT

#### *Geologic Hazards*

In the interest of public safety and geologic hazards mitigation, the Division in recent years has been concentrating a significant portion of its effort in areas where urban development is or will be taking place and where geologic hazards can cause loss of life or limb and property or monetary losses. It is hoped that geologic/seismic data will be effectively utilized by both local and State government agencies and the private sector. Experience and information recorded in the literature have shown that losses can be significantly reduced when: (1) geologic/seismic data are used by those with expertise in the geological sciences, and (2) reports prepared from the data are reviewed by those with similar expertise. The increased cost associated with such improved performance has been very insignificant and the cost benefits ratios have been well in excess of 10 to 1 in favor of taking preventive measures before the disaster occurs. In addition, a very apparent reduction in loss of life can be correlated with enforcement of up–to–date building codes.

Cooperative studies with local governmental agencies, other State agencies, and Federal agencies have enabled the Division to broaden its scope and its knowledge/data bank. The data thus obtained is in turn published and released for public use. These projects include cooperative studies related to the San Andreas, Elsinore, and Santa Monica–Raymond Hill fault systems, and geologic/seismic studies of portions of San Diego, San Bernardino, Orange, Los Angeles, Ventura, Santa Clara, Marin and Sonoma Counties. Continuation of cooperative studies has been programmed for fiscal year 1976–77.

Other projects related to geologic/seismic hazards that will directly or indirectly benefit the people of California and increase public safety by reducing losses of life and property are the Alquist–Priolo Special Studies Zones program, the Strong Motion Instrumentation Program, and the continuing effort by the engineering/environmental geologic review section. The Division has provided assistance to the Solid Waste Management Board, Geothermal Resources Board, Coastal Zone Conservation Commission, State Lands Commission, Division of Forestry, Department of Parks and Recreation, Department of Water Resources, Attorney General's Office, Energy Resources Conservation and Development Commission, and Office of Emergency Services in the areas of environmental geology, engineering geology, and geophysics/seismology.

#### *Basic Geology*

The basic geology program activity consists of areal geologic mapping and geologic compilation that is fundamental to mineral resource, engineering geology, and general land–use analyses. The basic objective is to understand and describe the distribution of rock units, their ages, their structural configurations, their geologic settings, and their physical properties to enable the State to advise in matters concerning the geology of any part of the State. Among other results, such investigations have assembled most of the knowledge concerning the location of faults in California.

Currently, this activity is being carried on at a constant level. Basic geologic mapping in progress is incidental to environmental geology investigations, but basic geologic mapping per se is not now being conducted by the Division. Compilation activity has focused on completing the 1:750,000–scale geologic map, and some effort will continue to be required to revise outdated 1:250,000–scale geologic map sheets.

#### *Geochemistry*

The prime mission of the Geochemical Section is to provide geochemical support to Division project activities. The primary work this fiscal year has been in support of nickel–cobalt, manganese and chromium mineral resource studies.

#### *Minerals*

The minerals program in fiscal year 1975–1976 has been largely dependent upon U.S. Bureau of Mines grants. Grants funded statewide studies of chromite, nickel–cobalt and manganese, and a study of the aggregate resources of the five–county area surrounding greater Los Angeles.

#### *Marine Geology*

The major efforts in marine geology during fiscal year 1975–76 involved the review and evaluation of the Coastal Plan and legislation concerning the Coastal Zone.

A study was made of a coastal area in Mendocino County in cooperation with the California Coastal Zone Conservation Commission.

#### *Geophysics and Seismology*

The Division is increasingly active in the collection, interpretation, and dissemination of basic geophysical and seismological data. These data form a basis for the wise management of Earth's resources, minerals, and surface area. They are used to identify potential geologic hazards of a primary and secondary nature and to provide basic information for identifying areas warranting more intensive investigations.

Geophysical field support was provided for several cooperative investigations in the form of magnetic surveys, gravity surveys, seismic refraction surveys, and electrical

resistivity surveys. These surveys provided information pertinent to the determination of local bedrock and/or water–table depths, identification of buried faults, variation in thickness of subsurface strata, and variation of seismic velocity of local rock units.

### *Fault Evaluation Program*

The Fault Evaluation Program is designed to implement the Alquist–Priolo Special Studies Zones Act of 1972. The main objective of the Act is to provide for public safety by regulating the siting of structures for human occupancy to avoid the placement of structures astride faults along which surface ruptures may occur.

The Division of Mines and Geology has the responsibility of delineating the Special Studies Zones near potentially active faults in California. Once the zones are officially designated, the affected cities and counties must, under certain circumstances, require that geological site investigations be conducted to determine the presence or absence of hazardous faults.

On July 1, 1974, the State Geologist issued the initial group of 175 official maps establishing Special Studies Zones near the San Andreas, Calaveras, Hayward, and San Jacinto faults. The maps depict the zone boundaries on 7.5–minute topographic maps (one inch equals 2000 feet). A second group of official maps — 81 new and 5 revised — was issued January 1, 1976, following the release of preliminary review maps 6 months earlier. Newly zoned faults include the Rogers Creek–Healdsburg, Owens Valley, White Wolf, Garlock, San Fernando, and Newport-Inglewood. At the end of FY 1975–76, preliminary review maps of Special Studies Zones were being prepared for the Raymond Hill and Cleveland Hill faults for release on July 1, 1976.

Under the Alquist–Priolo Act, the Division has a continuing responsibility to delineate new zones and revise existing zones as new fault data become available. This phase of the program has become increasingly more difficult as there are hundreds of potentially active faults which have not yet been evaluated and about which relatively little is known. The program has therefore been redirected. The state has been divided into 10 areas to be evaluated, one each year, over a ten–year period (see map). Potentially active faults within each area will be evaluated to determine which are "sufficiently active and well–defined" to warrant zoning under the law. Work on this redirected program commenced in March 1976. Two geologists and a geological aid are assigned to this program.

### *Strong Motion Instrumentation Program*

The Division's Strong Motion Instrumentation Program, operating from offices in Sacramento and San Bernardino, completed four years of operations under the advisory guidance of the Strong Motion Instrumentation Program Advisory Board.

Recommendations by the Board included approval of instrumentation of 17 additional dams as proposed by the California Water and Power Earthquake Engineering Forum. In addition, the Board provided extensive assistance to the Division in development of a comprehensive report on the origin, operations and plans of the Strong Motion Instrumentation Program. This report was requested by the Office of the Legislative Analyst and was published by the Division in January 1976 as Special Publication 48.

During this fiscal year, operations of the Strong Motion Instrumentation Program included the installation of 31 free–field instruments, the instrumentation of 9 dams with 29 instruments, and the instrumentation of 13 buildings with central recording systems possessing 110 data channels. The last two items reflect a change of thrust of the Program from free–field toward instrumentation of structures. As of June 30, 1976, 268 instruments were in operation throughout the State.

In addition to the installation of instruments, which is of primary concern in the Program, a project of upgrading free–field sites was undertaken. In this project, 31 sites were improved either by replacement of instruments or by retrofitting installed instruments to provide for a radio time–code recording capability.

The staff assigned to the Program as of the end of this fiscal year includes one Associate Geophysicist, one Assistant Geologist, one Civil Engineering Technician, one Electrician, three Electronics Technicians and one stenographer. Steps have been taken to add two Electronics Technicians early in fiscal year1976–77.

The Program was budgeted at $545,141 for the year. Actual expenses totaled $497,123 with revenues reaching $547,562, resulting in a net gain to the Strong Motion Instrumentation Fund of $50,439.

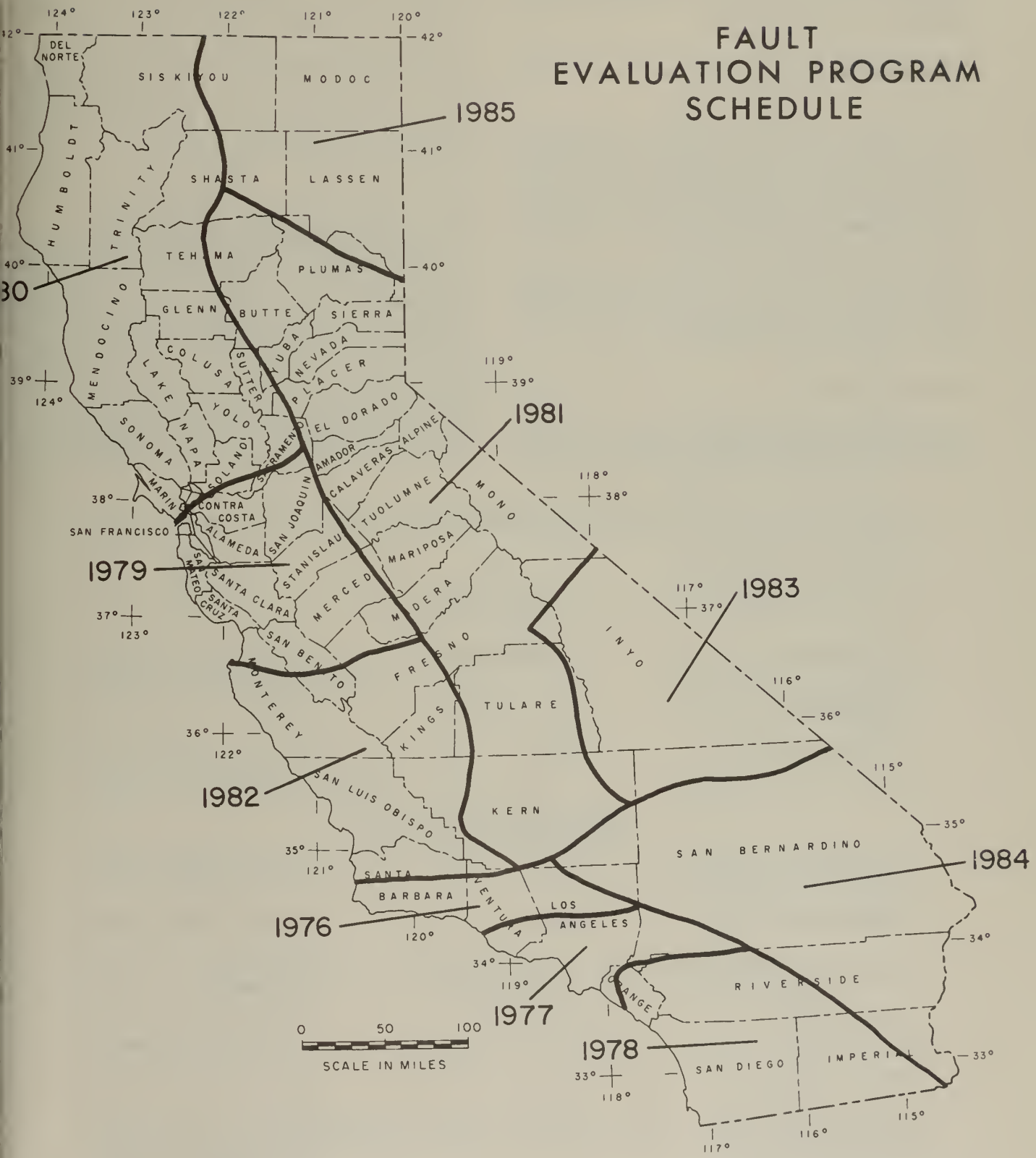
### *Environmental Impact Reports*

The Division has continued to review environmental impact reports (EIRs); approximately 298 reports were processed by the staff in 1975–76.

The reviewed EIRs evaluated a variety of projects such as power plant facilities, chemical plants, subdivisions, school sites, mining activity, and dam sites.

As outlined in the Division's EIR guideline in CDMG Note 46, the potential hazards of earthquake shaking, fault rupture, landsliding, erosion, expansive soil, tsunami, subsidence, and volcanic eruption are considered in the review. Mineral resource conservation and mined–land reclamation sections are also evaluated.

The two most significant projects, which involved the review of many supplemental reports and attendance by the staff at several meetings, were the Dow Petrochemical and the Lucerne Valley Generating Station projects. (As




Work plan and priarities far the Fault Evaluation Program, 1976–1985. Patentially active faults in each wark area will be evaluated during the year indicated, and thase faults determined ta be active will be zaned.

a result of involvement in these and similar projects the Division has been providing direct input to the Office of Planning and Research and the Resources Agency staff on geologic and seismic information.)

*California Energy Resources Conservation and Development Commission (ERCDC)*

In response to a request from ERCDC, the Division of Mines and Geology prepared a guideline, CDMG Note 47, Geologic Reports for Offshore Operations and Facilities. The guideline was well received by those involved in site considerations for the development of energy resources along coastal areas.

Preliminary discussions were started with ERCDC about the Division providing geologic/seismic information on nuclear and fossil fuel power facilities which come under the jurisdiction of ERCDC.

*Hospital Safety Act*

The Division continued to review reports under the provisions of the Hospital Safety Act (Health and Safety Code) which became effective March 7, 1973. This Act requires that new hospitals, including additions, reconstructions, and out–patient facilities, be functional during and after an earthquake or other natural disaster.

During fiscal year 1975–1976, CDMG provided the review of 150 new and supplemental geologic–seismic reports for hospital sites which were submitted by consulting engineering geology firms to the State Office of Architecture and Construction (OAC).

*State Surface Mining and Reclamation Act*

In order to obtain information needed to implement Division activities under the Surface Mining and Reclamation Act of 1975, a short pilot study was completed in the Stockton urbanizing area. The purpose was to classify areas on the basis of geologic factors and mineral deposit content and to determine time and other requirements to complete such a classification study. A report was submitted to Headquarters. Local government agencies were contacted to develop information and to design a draft format for State Policy, including a model ordinance and a model reclamation plan for surface mining operations.

## PROJECTS – FISCAL YEAR 1975–1976

| PROJECT | STAFF | STATUS |
|---|---|---|
| **AREAL GEOLOGY** | | |
| Badie quadrangle | Chestermon, Gray | Published: Mop Sheet 21. |
| North half Confidence Hills quadrongle | Troxel*, Wright* | In publicotion pracessing os Mop Sheet 34. |
| Oroville–Bongar mapping | Aune | Field work complete, office work in progress. |
| **ENVIRONMENTAL GEOLOGY** | | |
| Enviranmental impact reports review | Stoff | 120 reparts reviewed; continuing. |
| Haspital site reparts review | Staff | 150 reports reviewed; continuing. |
| Div. of Farestry – Timber Harvest Plan review | Huffman, Amimoto, Bocon, Streitz, Morton | One geologist full–time ossignment; cantinuing. |
| Geothermol activities | Bocon | Studies intermittent, responding to Geothermol Resources Board. |
| Tetan Dam investigatian | Bacon | Jaint DWR/DMG study; continuing. |
| Nucleor Regulatary Cammissian Nuclear projects review | Stoff | Continuing site review and onolysis of technicol reparts with Federal ogency staff. |
| Landslides in marine terrace terrain | Cleveland | In press: Speciol Repart 119. |

**Geologist no longer with CDMG*

## Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Landslides and climate (five separate investigations) | Cleveland | Nearing completian; recessed during mast af 1975–76 for variaus special evaluatians (Tapanga Beach, Dry Creek). |
| Enviranmental gealagy af Orange Caunty | Martan, Miller | Repart being revised after District review af first draft. |
| Special evaluatians (Mill fire area, San Gabriel Mauntains, Tapanga Beach Park, Dry Creek, etc.) | Cleveland | Field investigatians; memarandums completed; same being prepared far publicatian in *California Geology*. |
| Subsurface data callection | Spratte | Data ta be included in variaus prajects. |
| **GEOCHEMICAL** | | |
| Nickel and cabalt determinatian in lateritic samples | Majmundar, C. Smith | Analytical pracedures have been develaped ta determine nickel and cabalt cancentratians by atamic absarptian spectraphatameter. |
| Nickel and cabalt in Califarnia | Majmundar, Lafgren, C. Smith | Sampling and analytical wark far this praject have been completed and the repart has been submitted. An article an this subject has been written and is under review at District level. |
| Pracedure develapment far Ag, Al, As, Au, Ca, Cd, Ca, Cr, Cu, Fe, Hg, K, Mg, Na, Ni, Pb, Zn. | Majmundar, C. Smith | Atamic absarptian spectraphatametric pracedures far these elements (at trace cancentratians) have been impraved and new pracedures have been develaped. |
| Distributian af heavy elements hazardaus ta health in Salinas Valley regian af Califarnia | Majmundar | Manuscript completely edited and ready far publicatian as a special repart. |
| Aluminum, chramium, and magnesium determinatian in chramite samples | Majmundar, de Rama, Lafgren, C. Smith | Analytical pracedures have been develaped ta determine Al, Cr, and Mg (as majar elements) in the chramite samples by atamic absarptian spectraphatameter. |
| FeO determinatian in chramite samples | Majmundar, C. Smith | Special titrimetric pracedure has been develaped ta determine FeO in chramite samples. |
| Chramium in Califarnia | Majmundar, de Rama, Lafgren, C. Smith | Analytical wark far this praject has been completed and the repart has been submitted ta USBM. |
| Aluminum, calcium, capper, iran, manganese, phaspharus, silican, and zinc determinatian in manganese samples | Majmundar, Barchardt, Lafgren, Laza | Analytical pracedures have been develaped ta determine Al, Ca, Fe, Mn, P, and Si (as majar elements), and Cu and Zn (as minar/trace elements) by x–ray fluarescence. |

Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Manganese in Califarnia | Majmundar, Barchardt, de Rama, Lafgren, Laza | Analytical wark far this praject has been completed and repart has been submitted ta USBM. |
| Physical testing af sail and sediment samples | Barchardt, Majmundar, Lafgren | Used physical tests an sedimentary materials (particle–size distributian and Atterberg tests); bulk and clay mineralagy determinatian by x–ray diffractian. |
| X–ray diffractian analysis af clay minerals | Majmundar, Barchardt, Lafgren | Wark in pragress far develaping rapid pracedures. |
| Landslide studies and chemical stabilizatian | Barchardt, Lafgren, C. Smith | Wark in pragress. |
| Clay mineralagy and engineering praperties af sail samples | Barchardt, Lafgren, Laza | Work in pragress. |
| **GEOLOGIC MAPS** | | |
| Death Valley Gealagic Map Sheet, scale 1:250,000 | Streitz, Stinsan | Revisian completed, scribing in pragress. |
| Index ta Gealagic Maps, 1969–75 | Kiessling | Overall indexing 90% complete at year's end. |
| Index and explanatian af saurce data used ta campile State Gealagic and Fault Maps, scale 1:750,000 | Jennings | Being prepared as Bulletin 201, Faults and Gealagic Data af Califarnia. |
| State Fault Map, scale 1:750,000 | Jennings, Stinsan | Published: Gealagic Data Map Na. 1. |
| State Gealagic Map, scale 1:750,000 | Jennings, Stinsan | Campilatian completed; drafting pracedures in pragress. |
| **GEOPHYSICAL** (ather than Seismic and fault investigatians) | | |
| Gravity Map af Califarnia, scale 1:250,000 | Chapman, Chase, Campbel' | Published: Las Angeles, Bakersfield, Ukiah. In Press: San Jase. In preparatian: Needles, Fresna, Santa Maria, Saltan Sea. |
| Gravity Map af Califarnia, scale 1:750,000 | Chapman, Chase, Campbell | Narth half completed, sauth half 85% :amplete. |
| Aeramagnetic Map af Califarnia, scale 1:750,000 | Chase | Available data campiled; index map being prepared far publicatian. |
| Part Wine Area Study | Chapman, Clark, Chesterman | Repart in pragress. |
| Iane Geaphysical Study | Chapman, Bishap | Published: Special Repart 117. |
| San Luis – Ortigalita Fault Study | Buchhalz, Chapman | Repart being reviewed. |
| Badie Mining District | Chesterman, Gray, Chapman | See "Mineral Resaurces" listing. |

Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Gravity Leveling Study, Parkfield, Palmdale | Chase, Chapman, Real, Campbell | Manitaring selected statians far changes in gravity; evaluating data. |
| USGS Caap. Aeramagnetic Survey–Offshare Califarnia | Chapman | Planning far survey. |
| Nickel–Cabalt in Califarnia (USBM Grant Study) | Chesterman, Majmundar, Chapman | See "Mineral Resaurces" listing. |
| Geaphysical suppart was pravided far the fallawing caaperative prajects: | | |
| Marin Caunty<br>Orange Caunty<br>Ventura Caunty<br>Sanama Caunty<br>Santa Clara Caunty<br>Elsinare Fault–Sauth (USGS)<br>Raymand Hills–Hallywaad (USGS) | Chapman, Chase, Campbell | Results af the geaphysical studies are, ar will be, included in the final reparts an the prajects. |
| Micraacaustic Survey | Durrwachter, Bacan | Operating 5 statians Palmdale–Parkfield alang San Andreas fault; repart in *California Geology*. |
| | MARINE GEOLOGY | |
| Battam lithalagy map af affshare areas, Oregan ta Mexica, scale 1:500,000 | Welday*, Williams | Published: Map Sheet 26. |
| Limestane, dalamite, and shell resaurces af the Caast Ranges Pravince | Hart | In publicatian pracessing as Bulletin 197. |
| Limestane and dalamite in the Majave Desert and Basin and Ranges | Bawen*, Gray | Manuscript with authar far review. |
| Limestane and dalamite in the Transverse and Peninsular Ranges | Gray | Manuscript with authar far review. |
| Limestane and dalamite in the Sierra Nevada | Bawen*, Aune | Manuscript with authar. |
| | MINERAL STUDIES | |
| Badie mining district, Mana Caunty | Chesterman, Gray, Chapman | Manuscript with authar far review and revisian. |
| Gealagy af the sauthern Mather Lade | Evans | Manuscript in geadata pracessing. |
| Mine waste water and water use | Evans, Davis* | Manuscript in publicatian pracessing. |
| Legal Guide | Tilden | Manuscript with authar far revisian. |
| Sacramenta Caunty sand and gravel | Rapp | Manuscript in publicatian pracessing. |
| Sierra Nevada mine wastes | Clark | In geadata pracessing. |
| Striped Mauntain carbanate racks | Evans, Bawen*, Gray | In publicatian pracessing. |

**Geologist no longer with CDMG*

Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Alpine Caunty | Clark | In publicatian processing. |
| Imperial Caunty | Martan | In publicatian processing. |
| Riverside Caunty | Saul, Evans, Gray | Open–filed, pending publicatian. |
| Nickel–Cabalt in Califarnia (USBM grant study) | Chesterman, Majmundar | Completed material submitted ta USBM. |
| Uranium in Califarnia | Rapp | Manuscript with authar. |
| Lime in Califarnia | Rapp | Manuscript in publicatian pracessing. |
| Clay in Califarnia | Evans | Study in pragress. |
| Lead and zinc in Califarnia | Taylar | Study in progress. |
| Zircan in Califarnia | Taylar | Study in pragress. |
| Mercury in Califarnia | Davis* | Study in pragress. |
| Diatamite in Califarnia | Clark | Manuscript with authar far revisian. |
| Asbestas in Califarnia | Kelley | Manuscript with authar far revision. |
| Carbanate racks resaurces | Evans | In publicatian processing. |
| Preciaus metals in Califarnia | Clark | Manuscript with author far revision. |
| Chramite in Califarnia (USBM grant study) | Stinson, Bague, McCusker | Completed material submitted to USBM. |
| Aggregate resaurces, greater Las Angeles area | Andersan, Mansan, Clark, Fife | Field visits complete; draft reparts completed far USBM. |
| Iran and steel in Califarnia | Taylar | Study in progress. |
| Mineralizatian in sauthern Mather Lade, Mariposa Caunty | Evans | Study in pragress. |
| Ceramic grade sadium feldspar, San Bernardina Caunty | Smitter, Clark | Study and manuscript camplete. |
| Manganese Praject | Burnett | Completed far USBM; CDMG repart in preparatian. |
| Mines and mineral depasits in Death Valley Natianal Manument | Taylar, Evans, Rapp | Published: Special Repart 125. |
| Chramium Study | Smitter, Stinsan supervising | Phase II wark in pragress. |
| **SEISMICITY AND FAULT MOVEMENT** | | |
| Oraville earthquake af 1975 | Sacramenta District staff | Published: Special Repart 124. |

*Geologist no longer with CDMG*

## Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Earthquake magnitude as a functian af intensity data | Tappazada | Published in Bull. Seism. Sac. Amer., October 1975. |
| Earthquake Catalag, pre–1932 | Tappazada, Higgins, Parke | In pragress; pilat repart cavering 1928–1931 published in *California Geology,* October 1975. |
| Earthquake Catalag, 1932 anward | Real | Started creating new data file and madifying retrieval pragram. |
| Velacity anamaly precursary ta Oraville earthquake | Real | Internal repart campleted. |
| Tiltmeter Pragram | Bacan, Durrwachter, Sherburne, Tappazada | 3 tiltmeters an San Andreas fault and 1 in Oraville, results being analyzed. |
| Santa Manica–Raymand Hill fault zane (USGS caap.)* | Hill, Spratte, Bennett, Chapman, Chase, Real, Sherburne | Annual pragress repart submitted ta USGS, analysis af histaric Geadetic Data in pragress. |
| Ventura Caunty Seismic Safety* | Weber, Kiessling, Spratte, Jahnsan, Sherburne, Cleveland | CDMG Open–File Repart 76–5LA. |
| Newpart Inglewaad fault | Barraws, Bennett | Develaped caap. agreement with cities af Lang Beach and Signal Hill far surveys beginning August 1976. |
| Melanes fault, Placer Caunty | Bennett | Analysis af histaric data in pragress; CDMG releveling af 25 km campleted. |
| Faathills Shear Zane studies | Taylar, Rapp | Field recannaissance campleted; repart in preparatian. |
| Telluric Current–Self Patential | Durrwachter, Bacon | Operating 3 arrays an San Andreas fault, central Califarnia. |
| Crustal mavement studies near Parkfield, Califarnia | Bacan, Bennett, Chase, Radgers, Tappazada, Wells | Published in *California Geology,* September 1975. |
| Santa Manica–Raymand Hill fault zane. | Hill, Spratte | In pragress. |
| San Andreas fault zane: Leana Valley segment | Kahle, Beeby, Smith | Final technical repart ta USGS campleted; preparing far apen–file release. |
| San Andreas fault zane: Palmdale segment | Kahle, Beeby, Smith | Fault trace and gealagic maps campleted at year's end. |
| San Andreas fault zane: raadcut gealagy, State Raute 14 near Palmdale | Smith | Published in *California Geology,* May 1976. |
| San Diega fault study | Kennedy, Tan | Published: Special Repart 123. |
| Orange Caunty fault study | Miller, Tan | Repart being revised after District review af first draft. |

**Cooperative Project*

Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Son Andreos fault | Bennett | Continued periodic Geodimeter meosurements, including new meosurements in Son Francisca Boy and in Nopo Valley. |
| Elsinore foult zone, Riverside County, north portion | Weber | In pragress; preliminary report for USGS nearly campleted ot year's end. |
| Elsinore foult zone, Riverside County, south portion | Kennedy | First droft campleted at year's end. |
| Eorthquoke neor Anzo, Riverside County (8–1–75) | Hill | Published in *California Geology,* Navember 1975. |
| Earthquake on Golwoy Loke foult, Son Bernardino County (5–31–75) | Beeby, Hill | Published in *California Geology,* October 1975. |
| Recent eorthquakes neor Twentynine Polms, Son Bernordino County (11–15–75 ond 12–4–75) | Hill | Published in *California Geology,* June 1975. |
| **STATE SURFACE MINING AND RECLAMATION ACT** | | |
| SMARA County assistance ond areo designation | Burnett, Bocan, Ropp, Stinsan, Anderson | Caunty plonning deportments cantacted, pilat study submitted. |
| **URBAN MAPPING** | | |
| Juniper Hills quodrongle (San Andreas foult) | Barraws | First draft completed 1974–75; recessed during 1975–76 far ather San Andreas areas. |
| Posodeno quodrongle | Fife | Mapping in progress; base map prepared. |
| Southwest Son Bernardino Caunty | Fife, Spratte, Chase, Chapman | Report revised ofter Headquarters review; in press ot year's end. |
| Southeost quarter Mint Canyon quodrongle | Saul | Mopping campleted. |
| Southwest quorter Mint Conyon quodrongle | Soul | First draft campleted at year's end. |
| Notionol City, Imperiol Beach, Otoy Mesa quodrongles | Kennedy, Tan | Heodquorters review campleted at year's end. |
| San Diego City (six quodrongles) | Kennedy | In press: Bulletin 200. |
| Southwest quorter Mt. Boldy ond south half Glendoro 7 1/2' quodrongles | Streitz | Report being revised after Heodquorters review. |
| Sauth half Tustin quodrongle | Miller, Ton | In press: Speciol Repart 126. |
| West Centrol Mt. Wilson | Soul | In press: Mop Sheet 28. |
| Loguna Beoch quadrongle | Ton, Edgingtan* | In press: Speciol Repart 127. |
| Colabosas ond Thousand Ooks quodrongles | Weber | Report being revised ofter Heodquorters review. |

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Projects—Fiscal Year 1975–1976 (continued)

| PROJECT | STAFF | STATUS |
|---|---|---|
| Southeast quarter Oat Mt. quadrangle | Saul | Repart being revised after District review. |
| Southwest quarter Oat Mt. quadrangle | Evans | In publicatian processing. |
| La Habra, Yorba Linda, and Prada Dam quadrangles | Tan, Miller | Mapping completed; first draft nearly completed at year's end. |
| Northeast part Palos Verdes Hills | Cleveland | In press: Map Sheet 27. |
| Sonoma County; caunty–wide study ta assist in preparation of general plan elements | Huffman, Armstrang | Repart and maps completed; preparatian far publicatian in pragress. |
| Sonoma County; study af the slape stability in the Mark West Springs area | Armstrang, Wagner | Investigatian in pragress. |
| Marin Caunty; Pt. Reyes Statian, San Geronima Valley and Tiburon Peninsula | Rice, T. Smith | Field investigatians completed, maps and report in preparatian. |
| Marin County; Novata and Fairfax, Upper Ross Valley areas | Rice | Published: Preliminary Repart 21. |
| Santa Clara County; foothills | Armstrang, Wagner | Report and maps completed. |

## GEOLOGIC DATA ELEMENT

The objective of the Geologic Data Element is to provide information on the geology, mineral resources, and geological hazards of California. The Geologic Data staff publishes and distributes the results of studies made by California Division of Mines and Geology staff and others in the earth science professions. This is accomplished through the Division's special reports, bulletins, map sheets, special publications, and preliminary reports, by letter, by informal leaflets (CDMG Notes), by technical and semitechnical illustrated talks, by public exhibits, and by personal contact.

An information desk is maintained at each of the District offices. The Museum and Library at the San Francisco District also help to inform the public of the importance of geology to the economy of California.

The seismograph recorder in the lobby of the Resources Building in Sacramento is very popular and has made observers aware of the daily occurrence of earthquakes throughout the world, and of their special significance in California.

News releases are prepared and distributed to the media concerning the Division's publications. Thousands of inquiries received annually by the Division are answered by supplying copies of the CDMG Notes, *California Geology,* and occasionally by individual letter from a member of the technical staff.

The mineral exhibit located on the second floor of the Ferry Building in San Francisco is open to the public from 8 a.m. to 5 p.m. Monday through Friday. The minerals in one display are provided on a rotating basis by Bay area rock and mineral societies. Minerals from the exhibit are also displayed in the Golden Gate Bridge Authority and the World Trade Center.

At the Division's Library, state and foreign collections were organized and catalogued to provide ready access and appraisal. Cataloguing of the serial collections was also begun. The Division obtained an excess motorized storage tray drum from the Department of Benefit Payments. This replaced the small, hand–operated drum which had been filled; the new drum also has sufficient space for storage of microfilm and microfiche. Interlibrary loans and reference work were increased during the year in response to requests from the public and from corporations.

The publications staff reviewed the technical content of manuscripts, drafted illustrations and maps, edited manuscripts and maps, coordinated the printing and lithography, negotiated printing contracts, managed the printing budget, and supervised the distribution of the final printed reports. Revenue from the sale of Division publications during fiscal year 1975–76 was $108,720.

### *New Publications Released*

Special Repart 117. Geophysical investigatians in the lane area,

Amodor, Socromento, ond Coloveros Counties, Colifornio, by R.H. Chopmon ond C.C. Bishop. $3.50.

Speciol Report 119. Londsliding in Morine Terroce Terroin, Colifornio, by G.B. Clevelond. $1.00.

Speciol Report 121. Sond ond grovel resources of the Socromento oreo, Colifornio, by J.S. Ropp. $1.50.

Speciol Report 122. Engineering Geology of The Geysers Geothermol Resources Areo, Loke, Mendocino, ond Sonomo, Colifornio, by C.F. Bocon, P.Y. Amimoto, R.W. Sherburne ond J.E. Slosson. $3.50.

Speciol Report 124. Oroville, Colifornio, Eorthquoke, 1 August 1975, edited by R.W. Sherburne ond C.J. Houge. $3.50.

Speciol Report 125. Mines ond minerol deposits in Deoth Volley Notionol Monument, Colifornio, by J.R. Evons, G.C. Toylor ond J.S. Ropp. $3.50.

Speciol Publicotion 42. Foult Hozord Zones in Colifornio, by E.W. Hort. $1.00.

Speciol Publicotion 47. Active Foult Mopping ond Evoluotion Progrom, by Colifornio Division of Mines ond Geology. $2.00.

Mop Sheet 21. Geology of the Bodie quodrongle, Mono County, Colifornio, by C.W. Chestermon ond C.H. Groy. $4.50.

Mop Sheet 22. Geology of the Motterhorn Peok quodrongle, Mono ond Tuolumne Counties, Colifornio, by C.W. Chestermon. $4.50.

Mop Sheet 25. Corbonote Rock Resources of the Striped Mountoin Areo, Colifornio, by J.R. Evons, O.E. Bowen ond C.H. Groy. $1.75.

Mop Sheet 26. Offshore Surficiol Geology of Colifornio, scole 1:-500,000, by E.E. Weldoy ond J.W. Willioms. $9.00.

Bokersfield sheet, Bouguer Grovity mop of Colifornio, scole 1:250,-000, by W.F. Honno, H.W. Oliver, R.F. Sikoro ond S.L. Robbins. $4.00.

Los Angeles sheet, Bouguer Grovity mop of Colifornio, scole 1:250,-000, by W.F. Honno, J.D. Rietmon ond S. Biehler. $4.00.

Ukiah sheet, Bouguer Grovity mop of Colifornio, scole 1:250,000, by R.H. Chopmon, C.C. Bishop, G.W. Chose ond J.W. Gosch. $4.00.

Geologic Doto Mop No. 1. Foult map of Colifornio with locotions of volconoes, thermol springs ond thermol wells, scole 1:750,000, by C.W. Jennings. $5.00 (folded); $6.50 (rolled).

Mop of Imperial County, Colifornio, showing locotion of mines ond minerol deposits, compiled by P.K. Morton. $4.00.

Sixty–eighth report of the Stote Geologist.

### *Publications Reprinted*

Speciol Publicotion 33. A description of the set of Minerols ond Rocks furnished to Colifornio schools by the Colifornio Division of Mines ond Geology, by S.J. Rice. $1.00.

Speciol Publicotion 47. Active Foult Mopping ond Evoluotion Progrom, by Colifornio Division of Mines ond Geology. $2.00.

Speciol Publicotion 48. Second Report on the Strong Motion Instrumentotion Progrom, prepored under the direction of T.E Goy, Jr., Stote Geologist. $1.00.

Sonto Ano sheet, Geologic mop of Colifornio, scole 1:250,000 compiled by T.G. Rogers. $1.50.

Westwood sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by P.A. Lydon, T.E. Goy, Jr. ond C.W. Jennings. $1.50.

Son Froncisco sheet, Geologic mop of Colifornio, scole 1:250,000 compiled by C.W. Jennings ond J.L. Burnett. $1.50.

Sonto Roso sheet, Geologic mop of Colifornio, scole 1:250,000 compiled by J.B. Koenig. $1.50.

Bokersfield sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by A.R. Smith. $1.50.

Los Angeles sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by C.W. Jennings ond R.G. Strond. $1.50.

Trono sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by J.L. Burnett ond B.W. Troxel. $1.50.

Fresno sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by R.A. Motthews ond J.L. Burnett. $1.50.

Wolker Loke sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by J.B. Koenig. $1.50.

Son Luis Obispo sheet, Geologic mop of Colifornio, scole 1:250,000, compiled by J.B. Koenig. $1.50.

Mop of Son Bernordino County, Colifornio, showing locotion of mines ond minerol deposits, by Colifornio Division of Mines ond Geology. $1.00.

### *Open File Reports Released*

76–1LA Preliminory mop of foults of the Elsinore ond Chino foult zones in N.W. Riverside County, by F.H. Weber.

76–3SF Geologic foctors in coostol zone plonning, Schoenes Gulch to Guololo River, Mendocino County, by J.W. Wilioms ond T.L. Bedrosion.

76–4SF Geologic foctors in coostol zone plonning, Russion Gulch to Buckhorn Cove, Mendocino County, By J.W. Williams ond T.L. Bedrosion.

76–5LA Seismic Hozords Study of Venturo County, by F.H. Weber.

76–6LA Geology ond foult octivity ond the Polmdole segment of the Son Andreos foult zone, Los Angeles County, by A.G Borrows, J.E. Kohle ond D.J. Beeby.

### *Major Articles In California Geology*

Acoustic emission olong the Son Andreos foult in southern centra Colifornio.

iving glaciers af Califarnia.
ale af geatechnical cansultants and reviewers far the Caunty af San Matea.
he largest Pterasaur...yet.
Copper leaching at the Emma Mine in Saledad Canyan, Las Angeles Caunty.
The gealagy af Maaning Cave, Calaveras Caunty, Califarnia.
Crustal mavement studies near Parkfield, Califarnia.
Alquist–Priala Special Studies Zanes Act.
Recammended guidelines far preparing engineering gealagic reparts.
Galway Lake fault.
Caalinga's "Iran Zaa".
Seismic hazards and urbanizatian in Santa Clara Caunty.
Hamestake Mine fire.
Seismicity af Califarnia, 1928–1931.
Vertebrate fassils and the histary af animals with backbanes.
Reclamatian af sand and gravel pits.
Graund rupture assaciated with faulting—Oraville earthquake August 1975.
Surface Mining and Reclamatian Act af 1975.
Panamint—City af Silver.
Pygmy farest: an ecalagic staircase.
"Black–bax gealagy"—uses and misuses af geaphysics in engineering gealagy.
Blawaut af a geathermal well—The Geysers geathermal field, Sanama Caunty, Califarnia.
Shear wave velacity—prapagatian and measurement.
Strang–matian results—Cape Mendacina area.
The well paint.
Sandstane Caves (Tafani) in the central Santa Cruz Mauntains, San Matea Caunty.
New Special Studies Zanes.
Rale af the Califarnia seismic abserver.
Gealagic structure in Califarnia: Three studies with Landsat–1 imagery.
Califarnia well sample repasitary.
Raadcut gealagy in the San Andreas fault zane.
Guidelines far evaluating the hazard af surface fault rupture.
Pleistacene glaciatian in Canyan Creek area, Trinity Alps, Califarnia.
Law–elevatian glaciatian in narthern Califarnia.
Off–raad vehicle effects an Califarnia's Majave Desert.
Recent earthquakes near Twentynine Palms, San Bernardina Caunty, Califarnia.
The mineral industry af Califarnia in 1975.

### *New CDMG Notes*

46. Guidelines far gealagic seismic cansideratians in enviranmental impact reparts.
47. Recammended guidelines far gealagic reparts an affshare aperatian and facilities.
48. Checklists far the review af gealagic/seismic reparts.
49. Guidelines far evaluating the hazard af surface fault rupture.
50. Surface Mining and Reclamatian Act af 1975.

### *Revised CDMG Notes*

5. Serpentine – Califarnia State rack.
13. Passible saurces af gald nuggets.
28. Califarnia–Nevada caving clubs.
30. Califarnia Divisian af Mines and Gealagy: It's histary and functian.

## COOPERATIVE ACTIVITIES

The Division conducts a number of geological studies in cooperation with local governments, other State agencies, and Federal agencies. The studies are designed to meet the need for information about actual or potential areas of geologic hazard or about mineral resources. Some of the studies are conducted to demonstrate the need for, and the usefulness of, geology to local government planning, building, and public works agencies. Other projects are conducted to accelerate progress on Division projects or to enable the Division to begin new projects as soon as possible. Cooperative activities are funded jointly by the Division and the cooperating agency under various arrangements, the nature of which depends on the availability of funds and personnel, the relative urgency of the project to the State and to the cooperating agencies, and other factors.

## LOCAL AGENCIES

### *Los Angeles County*

The Department of the County Engineer and the Los Angeles County Flood Control District continued to provide funds to accelerate the Division's geologic studies in the County.

Field mapping in progress:
Southeast quarter of Mint Canyon quadrangle, north portion of Pasadena quadrangle, and southeast quarter of Newhall quadrangle.

Reports in preparation:
Juniper Hills quadrangle area; south half Glendora and southwest quarter Mt. Baldy quadrangles; southwest quarter Calabasas and southeast quarter Thousand Oaks quadrangles; parts of Oat Mountain and Mint Canyon quadrangles.

Reports in press:
Map Sheet 28, "Geology of the west central part of the Mt. Wilson 7 1/2' quadrangle, San Gabriel Mountains, Los Angeles County, California"; Map Sheet 27, "Geology of the northeast part of the Palos Verdes Hills, Los Angeles County, California."

Los Angeles County, Department of the County Engineer, continued to provide funds to accelerate the Division's cooperative fault hazards study with the U.S. Geological Survey (Earthquake Hazard Reduction Program) in the San Andreas fault zone area of the County. Geologic and fault maps of the Palmdale area of the San Andreas fault were completed during the year.

Reports in preparation:
Leona Valley segment of the San Andreas fault; Palmdale segment of the San Andreas fault.

### *Orange County*

The Environmental Management Agency (Department of Building and Safety, Road Department, and Orange County Flood Control District) continued to provide funds to accelerate the Division's geologic studies in the County.

Field mapping in progress:
La Habra, Yorba Linda, and Prado Dam quadrangles.

Reports in preparation:
Environmental geology of Orange County; fault hazards of Orange County.

Reports being processed for publication:
Laguna Beach quadrangle.

Reports in press:
South half Tustin quadrangle.

### *San Bernardino County*

No funds were provided by the County for continued work, but a report on the geology, geophysics and seismology of the southwestern part of the County was being processed for publication as Special Report 113, "Geologic hazards in southwestern San Bernardino County, California."

### *San Diego City*

A report on the results of the San Diego fault study, a U.S. Geological Survey co–op, was published: Special Report 123, "Character and recency of faulting, San Diego metropolitan area, California." No funds were provided for continued work in the County, but a report on the National City, Imperial Beach, and Otay Mesa quadrangles was being processed for publication as a Map Sheet.

### *Marin County*

Preliminary Report 21, "Geology and geologic hazards of the Novato area, Marin County, California" was completed and published. Field investigations in the Pt. Reyes Station, San Geronimo Valley and Tiburon Peninsula area were completed and work continues on the maps and report. The contract was amended to provide additional funds and time to include the Corte Madera area in this project.

Reports in preparation:
Pt. Reyes Station, San Geronimo Valley, Tiburon Peninsula, and Corte Madera areas, and the final report for the San Geronimo (east), San Rafae (north half), and Novato (south half) quadrangles

Reports published:
Preliminary Report 21, "Geology and geologic haz ards of the Novato area, Marin County, California"

### *Santa Clara County*

The Division, in cooperation with Santa Clara County completed a detailed investigation of the Calaveras faul in the foothills of the Diablo Range in the southeaster Santa Clara Valley. Maps showing relative slope stability traces of active and potentially active faults and the basi geology, together with an explanatory text, were com pleted and presented to the County.

### *Sonoma County*

A series of work plans designed to carry out the provi sions of the County's general plan for recognition an mitigation of geologic hazards was completed and deliv ered to the County. During the year, the Division entere into another contract with the County to implement on of these work plans — a study of the slope stability in th Mark West Springs–Porter Creek area north of Sant Rosa. Field investigations were well under way on thi project at the end of the fiscal year.

## STATE AGENCIES

### *Office of Architecture and Construction*

Hospital Safety Act (see page 12 of this report for thi activity).

### *Division of Forestry*

One staff member was assigned full–time to service geo logical needs of the Division of Forestry.

### *Division of Oil and Gas*

The Division published Special Report 122, "Engineer ing Geology of The Geysers Geothermal Resources Area Lake, Mendocino, and Sonoma Counties". This repor will be used with the "Master EIR Guideline for the Geo thermal Area at The Geysers", prepared by the Divisior of Oil and Gas and the Office of Program Development

### *University of California at Berkeley*

The Seismological Station provided the Division with detailed information on California earthquakes under the terms of a continuing agreement. The Division is notifie by telephone of the location and magnitude of earthquake greater than magnitude 5 in northern and central Califor

nia so that an earthquake–response team may be deployed rapidly to evaluate potential geologic hazards in affected areas.

### *Other Cooperative Services*

In addition to the funded cooperative or contract projects, the Division participated in a number of inter–agency activities. A partial listing of the inter–agency groups in which the Division was represented during the fiscal year follows:

Advisory Board to Strong Motion Instrumentation Program
Advisory Committee on Geographic Names
Advisory Group to Joint Legislative Committee on Seismic Safety
Archaeological Study Task Force
Building Safety Board (Department of Health) – Geotechnical Subcommittee

Geothermal Resources Board
Governor's Earthquake Council
Governor's Interagency Earthquake Committee
Land Use Study Committee (Office of Planning and Research)
Monterey Basin Pilot Monitoring Project Committee
Power Plant Siting Committee
Resources Agency Task Force on Timber Harvest Plan Review
Seismic Safety Commission – Hospital Act Committee
State Solid Waste Management Board
State Solid Waste Management and Resources Recovery Advisory Council
Technical Advisory Committee to Geothermal Resources Board
Technical Advisory Committee to San Francisco Bay Conservation and Development Commission

## FEDERAL AGENCIES

### *U.S. Bureau of Mines*

The Bureau awarded a grant of $50,000 to the Division for support of a research project entitled "Aggregates in the greater Los Angeles area, California." The objective of the project was to gather and analyze data on ownership, operation, production, marketing, extraction, processing, transportation, land use, and environmental considerations from all active aggregate producers and ready mix plants within a 60–mile radius of Los Angeles Civic Center. Field investigations of 72 active aggregate deposits were made. Available reference materials were assembled and studied and reserves and resources were documented for each location examined. A property and plant report was made for each deposit and plant visited. The data thus derived and a report on the aggregates industry in the greater Los Angeles area will be transmitted to the Bureau early in the ensuing fiscal year. The report will be prepared for immediate open–file release and later publication.

A $50,000 contract to supply the Bureau with data regarding the occurrence of chromite and manganese in California was completed.

### *U.S. Geological Survey*

The U.S. Geological Survey provided funds for geological studies by the Division along the San Andreas fault in Los Angeles County, along the Elsinore fault in Riverside County, and along the Santa Monica–Hollywood–Raymond Hill fault in Los Angeles County. These studies are a part of the U.S. Geological Survey's Earthquake Hazard Reduction Program. The Division has been a participant in the program from 1972–73 through 1975–76. During 1975–76, the grant amount was $100,000.

## OTHER ORGANIZATIONS

### *California Institute of Technology*

Under a continuing agreement with the Seismological Laboratory of the California Institute of Technology, the Division provides funds for performing services in connection with the recording and study of earthquakes in California. CIT provides prompt notification by telephone of the location of all earthquakes greater than Richter magnitude 4.5 in southern California.

## OTHER COOPERATIVE ACTIVITIES

The Division continued to cooperate with Federal, State, county and city agencies, universities and colleges, professional groups, private companies, and individuals without formal contracts or matching funds, often on an individual basis, by exchanging information on the geology and the mineral resources of California. Many of the activities listed elsewhere in this Report have been materially assisted by such cooperation.

Access to libraries has been provided to Division staff by various colleges and universities. University of California campuses at Los Angeles, Riverside, and San Diego (Scripps Institution of Oceanography) and the California Polytechnic State University campus at San Luis Obispo provide office space. The long–standing cooperation with the California Academy of Sciences continued with the Division's Senior Geological Scientist, Charles W. Chesterman, serving as the Academy's Honorary Curator of Minerals.

## BUDGET SUMMARY

### EXPENDITURES

| | | |
|---|---|---|
| Personal Services | | $2,104,102 |
| Operating Expenses | | 870,705 |
| General Expense | $125,420 | |
| Printing | 207,952 | |
| Communications | 41,239 | |
| Travel–Out–of State | 2,973 | |
| Travel–In–State | 87,226 | |
| Motor Vehicle Operations | 51,176 | |
| Professional/Consulting Services | 95,413 | |
| Pro Rata Costs | 16,688 | |
| Facilities Operations & Maintenance | 505 | |
| Rent | 197,780 | |
| Blueprinting | 31,757 | |
| Out, Service Training | 4,762 | |
| In, Service Training | 0 | |
| Electronic Data Processing | 7,814 | |
| Equipment | | 346,348 |
| Replacement | 11,802 | |
| Additional | 334,546 | |
| California Institute of Technology Seismography Network Contract | | 57,000 |
| Total Expenditures | | 3,378,155 |
| Less | | 1,065,007 |
| Reimbursements | 557,582 | |
| Strong Motion Instrumentation Program Fund | 484,625 | |
| California Water Fund | 11,400 | |
| State Highway Account, State Transportation Fund | 11,400 | |
| Total General Fund Expenditures | | $2,313,148 |

## RECENT LEGISLATION

Legislative measures of concern to the Division enacted into law during 1975–1976 are:

AB 730, Alatarre. Chapter 256 (1975) — Exempts buildings used for off–campus registered apprentice courses from Field Act requirements. (Effective date July 9, 1975)

AB 798, Davis. Chapter 465 (1975) — Provides a system by which schools may receive additional school housing aid funds for the replacement or rehabilitation of structurally inadequate schools. (Effective date August 29, 1975)

AB 1269, Thurman. Chapter 707 (1975) — Exempts the field house at Radcliff Stadium from Field Act requirements until July 1, 1976. (Effective date September 14, 1975)

AB 2488, Chappie. Chapter 1152 (1975) — Allows brand owners of alcoholic beverages to replace liquor lost to retailers during the earthquakes which occurred between July 31 and August 3, 1975. (Oroville area earthquakes). (Effective date September 29, 1975)

AB 1843, Cullen. Chapter 177 (1976) — Excludes out–patient service facilities and single–story wood frame construction buildings used as skilled nursing facilities or intermediate care facilities from seismic safety requirements. Also requires that construction of these facilities conform with the Uniform Building Code, and that a structural engineer submit a declaration that the building complies with these standards. (Effective date January 1, 1977)

SB 271, Marks. Chapter 1104 (1975) — Calls for the land use, circulation, housing, conservation, open space, seismic safety, and noise elements in the general plans for cities and counties to comprise an integrated, consistent, and compatible statement of policies.

SB 345, Nejedly. Chapter 1255 (1975) — Opens oil, gas, and geothermal well records to public inspection. The well records may remain confidential for specified periods of time upon the request of the owner or operator. No well records will be open to public inspection prior to July 1, 1976.

SB 756, Nejedly. Chapter 1131 (1975) — Enacts the Surface Mining and Reclamation Act of 1975 to govern surface mining operations and to provide for the reclamation of mined lands. The bill provides that the State Mining and Geology Board shall adopt a state policy for the conduct of surface mining and reclamation. It also provides for implementation and enforcement of the Act by cities and counties.

SB 765, Behr. Chapter 713 (1975) — Permits the Salinas–Stinson Elementary School District, which has buildings located on a geologic fault zone, to use state school building aid funds to construct new buildings on a safe site. (Effective date September 15, 1975)

SB 811, Dills. Chapter 316 (1975) — Permits the sale of mineral deposits by any state agency only with the approval of the State Lands Commission.

SB 865, Stiern. Chapter 275 (1975) — Prohibits the use of any school building that has never met Field Act requirements. (Effective date July 14, 1975)

SB 927, Mills. Chapter 906 (1975) — Enacts the State Historic Building Code which provides regulations for the rehabilitation, preservation, restoration or relocation of historical buildings or structures. Also provides reasonable safety from fire, seismic forces or other hazards for occupants of such buildings.

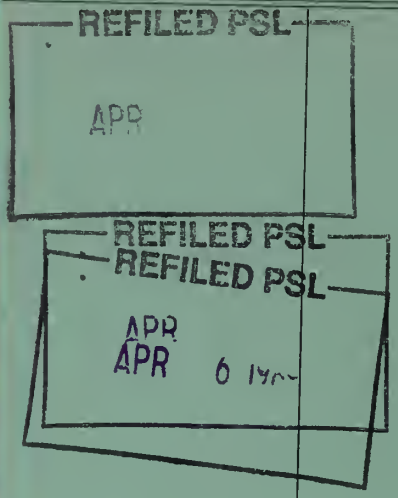
SB 1340, Alquist. Chapter 112 (1976) — Extends the statutory life of the Seismic Safety Commission to January 1, 1981. The bill also provides that a quorum consist of nine members or a majority of the appointed members at the time, and allows the two legislative members to appoint a voting alternate. (Effective date January 1, 1977)

SJR 32, Rains. Chapter 54 (1976) — Requests the President and Congress to prevent strip or open–pit mining in an area of the Los Padres National Forest 25 miles north of Ventura, near Ojai. Also requests that the Environmental Impact Statement for the project be considered a draft and that a public hearing be held in the local area on a revised Environmental Impact Statement. (Effective date June 24, 1976)

All chapters became effective January 1, 1976, unless otherwise noted.

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

BOOKS REQUESTED BY ANOTHER BORROWER
ARE SUBJECT TO RECALL AFTER ONE WEEK.
RENEWED BOOKS ARE SUBJECT TO
IMMEDIATE RECALL

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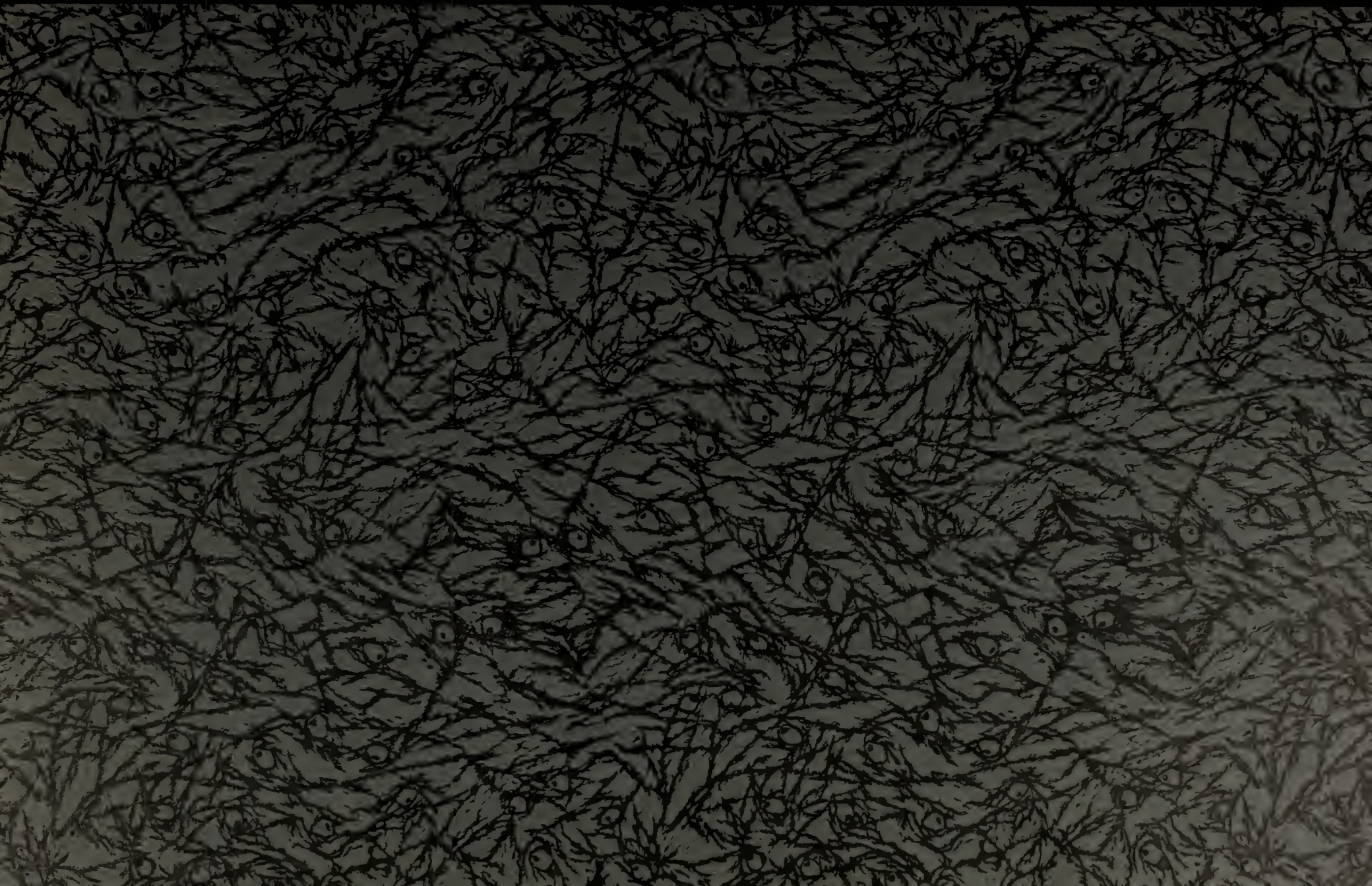
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